DRAFT PLAN OF STUDY

FOR THE PREPARATION OF A

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

FOR

SEMINOLE ELECTRIC COOPERATIVE INC.

SEMINOLE GENERATING STATION

UNIT 3

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LIST OF ACRONYMS	
BACT	Best Available Control Technology
BTA	Best Technology Available
CAIR	Clean Air Interstate Rule
CAMR	Clean Air Mercury Rule
CEMS	Continuous Emission Monitoring System
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESP	electrostatic precipitators
FAA	Federal Aviation Authority
FDCA	Florida Department of Community Affairs
FDEP	Florida Department of Environmental Protection
FDOS	Florida Department of State
FDOT	Florida Department of Transportation
FFWCC	Florida Fish and Wildlife Conservation Commission
FGD	flue gas desulfurization
FNAI	Florida Natural Areas Inventory
fps	feet per second
gpm	gallons per minute
IGCC	integrated gasification combined cycle
MACT	Maximum Achievable Control Technology
MGD	million gallons per day
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFRPC	North Florida Regional Planning Council
NOI	Notice of Intent
NO_X	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NSPS	New Source Performance Review
NSR	New Source Review
O_3	ozone
Pb	lead
PC	pulverized coal
PSD	Prevention of Significant Deterioration
$PM_{2.5}$	particulate matter sized 2.5 microns in diameter and less
PM_{10}	particulate matter sized 10 microns in diameter and less
PPSA	Florida Electrical Power Plant Siting Act
REA	Rural Electrification Administration
RFP	Request for Proposal
RUS	Rural Utilities Service
SCA	Site Certification Application
SCR	selective catalytic reduction

LIST OF ACRONYMS	
SECI	Seminole Electric Cooperative Inc.
SEIS	Supplemental Environmental Impact Statement
SGS	Seminole Generating Station
SJRWMD	St. Johns Water Management District
SO_2	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UMAM	Uniform Wetland Mitigation Assessment Methodology
USACE	U. S. Army of Corps of Engineers
USFWS	U. S. Fish and Wildlife Service
VOC	volatile organic compounds
ZLD	zero liquid discharge

1.0 INTRODUCTION

1.1 Project Background

Seminole Electric Cooperative, Inc. (SECI) is preparing to apply for environmental approvals necessary to construct and operate a new coal fired unit (Unit 3) at the Seminole Generating Station (SGS) in Putnam County, Florida. SGS's current electric generating capacity at this site is 1,300 megawatts (MW) from two 650 MW coal units. Unit 1 began commercial operation in January 1984 and Unit 2 began commercial operation in January 1985. The SGS Unit 3 Project will add a third coal unit scheduled to go into service in May 2012. SECI supplies electricity to 10 member distribution electric cooperatives in 46 of Florida's 67 counties from the Florida panhandle to the southwest portion of the state (See Figure 1). The new capacity is needed to ensure a reliable, affordable supply of energy for SECI's distribution systems, and enhance fuel diversity and reliability.

The Rural Utilities Service's (RUS) predecessor agency, the Rural Electrification Administration (REA) initially prepared an Environmental Impact Statement (EIS) for SGS in 1979 and issued a Record of Decision for Seminole Generating Station Units 1 and 2 which affirmed that the project minimized or avoided environmental impacts to the maximum extent practicable and that the action incorporated practicable mitigation procedures.

1.2 National Environmental Policy Act (NEPA) Scoping/Public Participation Process

The National Environmental Policy Act (NEPA) is the national charter for the protection of the environment. NEPA establishes policy, sets goals, and provides a means for carrying out the policy through a systematic, interdisciplinary decision making process.

The NEPA process applies to all actions that constitute "major federal actions" which have a significant effect on the environment. RUS has determined that its loan guarantee commitments for bulk power generation facilities are "major federal actions significantly affecting the quality of the environment" and therefore, the responsibility of implementing the requirements of NEPA apply to RUS programs and administrative actions. Since SECI is seeking financing for the SGS Unit 3 project from RUS, RUS will conduct a full NEPA review and prepare a Supplemental Environmental Impact Statement (SEIS) on the proposed SGS Unit 3 project. An environmental analysis and

alternatives analysis must be conducted to form the basis of a Supplemental Environmental Impact Statement (SEIS). As the lead agency, RUS will involve other federal agencies in the review of the environmental analysis and preparation and review of the SEIS.

Within the state of Florida, the licensing of a new power plant requires compliance with local ordinances, state regulations, and federal laws and requires certification pursuant to the Florida Electrical Power Plant Siting Act (PPSA). The PPSA certification process is generally a 14-month process which begins with the submittal of a Site Certification Application (SCA) and culminates in a formal action which addresses all state, local, and regional licensing issues. The PPSA certification process is administered by the Florida Department of Environmental Protection (FDEP). Federal, state, regional, and local agencies, such as the U.S. Environmental Protection Agency (EPA); the St. Johns River Water Management District (SJRWMD); Putnam County; and others, also participate in the review process. An administrative law judge conducts a formal hearing and issues a recommended order addressing compliance with all applicable regulatory requirements and the final state licensing decision is made by the Governor and Cabinet in their capacity as the Siting Board in the State of Florida.

SECI intends to work cooperatively with state and federal agencies to ensure the timely and efficient licensing of the proposed SGS Unit 3 Project. Both the PPSA certification process and the NEPA process require comprehensive alternative, environmental, and economic evaluations. Both processes set procedures for decision-making, the development of information, public involvement, and agency interaction. It is anticipated that RUS will be the lead agency for the NEPA/SEIS process and the FDEP will administer the PPSA Certification process.

From a legal perspective, the PPSA process is distinct from the NEPA process; however, the environmental impact analyses and opportunities for public input, where applicable, will be aligned. Additionally, whenever possible, efforts will be made to consolidate similar activities within the processes and coordinate activities so that actions occur concurrently rather than sequentially.

This Draft Plan of Study outlines the proposed scope of studies that will be conducted to support the SEIS [and Florida Site Certification Application (SCA)] to be prepared for the SGS Unit 3 Project. This Draft Plan of Study provides basic information about the project, the environmental regulatory approval process, and the degree of the environmental impact analyses proposed to be included in the

SEIS (and SCA). This document will be revised as necessary after the public scoping meeting has been held and the comment period concludes.

The Draft Plan of Study consists of the following sections:

- Section 1.0 provides background for the SGS Unit 3 Project, and identifies the project's sponsor, the lead agency for preparing the SEIS, the proposed public participation program, and an initial list of permits and approvals required for the project.
- Section 2.0 provides an overview and description of the existing SGS Unit 1 and 2 operations, proposed Unit 1 and 2 upgrades, and the proposed SGS Unit 3 Project.
- Section 3.0 describes the land use and environmental impact analyses methodology. This section provides a preliminary identification of potentially significant environmental issues that will be analyzed in the SEIS. Public input regarding the identification of potential additional issues and topics for review will be thoughtfully evaluated.
- Section 4.0 defines the types of alternatives to the SGS Unit 3 Project that have been evaluated and explains the alternatives analysis process.
- Section 5.0 describes the process by which public comments and/or requests to participate in the public scoping meeting should be provided.

The Notice of Intent (NOI) to prepare the SEIS was published in the Federal Register on October 7, 2005, which initiated the scoping process as required by RUS to implement NEPA. During the scoping meeting RUS will be seeking the input of the public and other interested parties regarding the project. RUS has scheduled a scoping meeting on October 20, 2005 from 3:00 p.m. to 7:00 p.m. at the Campbell Center at Ravine Gardens, 1600 Twigg Street, Palatka, Florida, 32178, Telephone (386) 329-3721. Substantive comments regarding the project received during the public scoping session and the written comment period will be addressed in the Summary of Public Scoping Comments Report.

1.2.1 Project Sponsor and Lead Agency

Project Sponsor

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1.2.2 Permits and Approvals

A preliminary list of permits and approvals that are required for the SGS Unit 3 Project is provided in Table 1.

1.2.2.1 RUS/NEPA Process – Reviewing Agencies

Lead Agency

Rural Utilities Service - U.S. Department of Agriculture (RUS)

Commenting Agencies

U. S. Environmental Protection Agency (EPA)
U. S. Army Corps of Engineers (USACE)
U.S. Fish and Wildlife Service (USFWS)
National Park Service/Federal Land Management (NPS)
National Marine Fisheries Service (NMFS)
Federal Aviation Authority (FAA)

A summary of the RUS/NEPA Estimated Timeline for the SGS Unit 3 Project is provided on Figure 2. The scoping meeting, issuance of the draft SEIS, public meeting and issuance of the Final SEIS are important activities within the RUS/NEPA timeline.

1.2.2.2 PPSA Process – Reviewing Agencies

Lead Agency

Florida Department of Environmental Protection (FDEP)

Affected Agencies

St. Johns River Water Management District (SJRWMD)
Northeast Florida Regional Planning Council (NFRPC)
Florida Fish and Wildlife Conservation Commission (FFWCC)
Florida Department of Transportation (FDOT)
Florida Department of Community Affairs (FDCA)
Florida Department of State – Historical Resources (FDOS)
Florida Public Service Commission (FPSC)
Putnam County

A summary of the Estimated PPSA Certification Process Timeline is provided on Figure 3. Key activities in the process include the Public Service Commission determination of need for the project, a land use hearing to determine the consistency of the project with existing land use plans and zoning ordinances, and the Certification Hearing by the Governor and Cabinet. Unique to the PPSA Certification process is the statutory timeframes for administrative action.

2.0 PROJECT DESCRIPTION

2.1 Existing Facilities

The Seminole Generating Station (SGS) is located in northeast Putnam County, Florida, approximately five miles north of the City of Palatka (See Figures 4 and 5). The SGS power plant property encompasses approximately 2,044 acres.

The SGS power plant project was initially certified pursuant to the Florida Electric Power Plant Siting Act in 1979 and received an Environmental Impact Statement (EIS) from the Rural Electrification Administration in 1980 for two coal-fired steam-generating units with a total nominal generating capacity of 1,300 MW. Unit 1 began commercial operation in January 1984 and Unit 2 began commercial operation in January 1985.

Units 1 and 2 burn bituminous coal primarily from mines in western Kentucky and southern Illinois, or a blend of coal and petroleum coke with up to a maximum of 30 percent petroleum coke. On-site coal and petroleum coke storage is provided to ensure an adequate fuel supply. The long-term coal storage area is located adjacent to the west side of the existing units and provides 45 to 60 days of fuel inventory. The coal-pile storage area has a durable liner to prevent runoff from entering groundwater resources.

Coal and petroleum coke are unloaded from rail cars and transported to the electric generating units on a covered conveyor system. The fuel is crushed, pulverized into a fine powder, and burned. Treated water flows through boiler tubes producing superheated, high-pressure steam which drives the high, intermediate, and low-pressure stages of the turbine generator. More specifically, the steam enters and drives the high-pressure section of the turbine and is then routed back to the boiler for reheating before entering the intermediate and low-pressure sections. All three turbine sections are connected in series on a common shaft. Electricity is produced by the directly coupled generator located on the end of the low pressure turbine shaft.

In addition to steam used to produce electricity, flue gas, fly ash and bottom ash are also produced as a result of the combustion process. Bottom ash is collected and removed from the bottom of the boiler and is sold to concrete and concrete block manufacturers. Flue gas and fly ash exit the boiler into the post-combustion air pollution control equipment. The equipment operates in series, the first

of which is the plant's electrostatic precipitators (ESPs). The ESPs remove 99.7 percent of all fly ash from the flue gas. Electrically charged metal plates attract the fly ash and deposit it in large collection hoppers at the base of the precipitators. Fly ash is currently disposed in the SGS permitted landfill which is located north of Units 1 and 2.

The plant's flue gas desulfurization (FGD) system is next in the air pollution control equipment sequence. The systems' "wet scrubbers" remove sulfur dioxide (SO_2) from the flue gas. SO_2 removal is accomplished by spraying a mixture of limestone and water into the upper part of the scrubber. The flue gas from the electrostatic precipitator enters near the bottom and comes into contact with the spray as it rises. The SO_2 in the flue gas reacts with the calcium in the limestone and is oxidized to produce calcium sulfate. The calcium sulfate slurry from the plant's FGD system is pumped to the SGS effluent processing system where it is dewatered. The resulting solids are a synthetic gypsum product ready for use in the production of wallboard. SECI produces and sells over 500,000 tons of synthetic gypsum per year to Lafarge Corporation, a wallboard production facility located adjacent to SGS Units 1 and 2.

Flue gas leaving the scrubbers exits through two flues contained in a common stack. The stack's outer concrete shell protects the two inner flues (one for each unit) from high winds. Each of the flues is lined and constructed with acid resistant brick.

Steam exiting from each steam turbine is converted back into water inside the condenser. The steam condenses on the outside of condenser tubes conveying cooling water from the two cooling towers. The cooling water releases heat in the cooling towers. The condensed water is pumped back to the boiler and is once again heated to produce steam.

The SGS cooling towers use natural draft technology to cool water. The towers are made of concrete and use a hyperbolic design for air induction. The hot condenser cooling water enters the cooling tower and a draft is produced as water falls and air rises to the top of the cooling tower. This airflow, in conjunction with the hyperbolic shape of the tower, causes cool air to be drawn in through openings at the base of the tower and cools the falling water. Depending on air temperature and humidity, the cooling water temperature can drop approximately 21 degrees Fahrenheit. The cooled water is then returned to the condenser to be used in a continuous cycle. Each tower can cool more than 280,000 gallons of water per minute (gpm).

SGS utilizes water from the St. Johns River and the Floridan aquifer as water supply sources for plant operations. Water withdrawn from the St. Johns River is currently used as service water for certain plant processes and cooling tower makeup. Historically, average water withdrawal from the St. Johns River has been approximately 25 million gallons per day (MGD). High quality (purified) water required for boiler make-up is currently withdrawn from groundwater via two onsite groundwater wells at a rate of approximately 0.5 MGD.

Wastewater collected from floor drains, the coal pile, bottom ash collection systems, equipment cleaning, demineralization regeneration, well water pretreatment backwash, and a portion of stormwater runoff from the plant island area is treated at the plant's wastewater treatment facility. Wastewater is first placed into equalization basins where oily residues are skimmed off. Further treatment includes pH adjustment and settling of suspended solids. The wastewater is mixed with cooling tower blowdown, treated sanitary wastewater and gypsum purge water prior to discharge into the St. Johns River. Monitoring ensures the quality of the discharged water.

The existing stormwater management system collects and treats stormwater runoff from non-process equipment areas such as parking lots and building roofs. The system is comprised of ditches, swales, culverts and berms and provides treatment for the 10-year, 24-hour storm event.

To ensure the plant is operating properly and that all permitting requirements are met, SECI currently conducts extensive monitoring and files detailed monitoring reports. These monitoring results are routinely submitted to regulatory agencies, such as the EPA, FDEP, and SJRWMD.

2.2 SGS Unit 1 and 2 Upgrades

SECI has planned upgrades to Units 1 and 2 which include burner modifications, the addition of selective catalytic reduction (SCR) systems for nitrogen oxide (NO_X) removal, and flue gas desulfurization (FGD) system upgrades for SO_2 control to comply with air regulations that will go into effect beginning in 2008 through 2010. Compliance with the Clean Air Act Regulations, combined with additional reductions, will allow SECI to add Unit 3 with no net increase in total emissions of NO_X and SO_2. The upgrades to Units 1 and 2 are not subject to the NEPA SEIS process. SECI will submit detailed information on the proposed Unit 1 and 2 upgrades to the FDEP in a separate PPSA modification package from the Unit 3 modification discussed in this document.

2.3 SGS Unit 3 Project

SECI intends to integrate the SGS Unit 3 Project into the existing SGS site. The SGS Unit 3 Project will utilize advanced supercritical pulverized coal technology with state-of-the-art emission controls. Unit 3 will be located proximate to the existing SGS Units 1 and 2 and will be rated at a nominal 750 MW. SECI anticipates Unit 3 will begin commercial operation in May 2012. The new 750 MW unit can be readily accommodated on the existing SGS site.

The following emission control equipment has been proposed:

- A wet flue gas desulfurization system for approximately 98 percent removal of sulfur dioxide; the wet FGD system will be used to produce commercial-grade gypsum that will be sold for use in the manufacture of wallboard;
- A selective catalytic reduction system and combustion controls to remove approximately 90 percent nitrogen oxides;
- An electrostatic precipitator for collection and removal of fine particles;
- A wet electrostatic precipitator for control of sulfuric acid mist; and
- Mercury removal through application of the above technologies.

These controls will result in compliance with all applicable air quality requirements by an ample margin. Figure 6 provides a diagram which illustrates how SGS Unit 3 proposes to reduce air emissions.

Fuel (coal and petroleum coke) for Unit 3 will continue to be delivered by rail. The addition of Unit 3 will increase coal deliveries to approximately 550 unit trains per year (or 5.5 million tons per year based on a 10,000 ton capacity train). The existing coal storage area has adequate capacity for the additional Unit.

Historically, the average water withdrawal from the St. John's River has been approximately 25 MGD. With the addition of Unit 3, the average withdrawal of water is projected to increase to approximately 35 MGD. This anticipated volume represents less than 1.1 percent of the annual average river flow. The intake structure will not require modification to support the additional withdrawal. An additional pipe will be added between the intake structure and the pump house, as

well as between the pump house and the new SGS Unit 3, to ensure that adequate flow is available for cooling water.

An annual average of .55 MGD of groundwater is currently authorized for makeup to the Unit 1 and 2 boilers. An additional withdrawal of approximately 0.2 MGD of groundwater is projected for makeup to the Unit 3 boiler.

Most process wastewater streams will be treated and recycled as make-up water to the FGD scrubber system. Wastewater from the FGD system will be treated in a new zero liquid discharge system which will remove dissolved solids from the wastewater and create a solid waste material. The solid waste will be disposed in the onsite landfill or offsite in permitted landfills. The treated wastewater from the zero liquid discharge system will be reused onsite in various plant process systems.

The only wastewater proposed to be discharged to the St. Johns River will be cooling tower blowdown. The maximum temperature difference between ambient St. Johns River water and cooling tower blowdown is projected to be the same as for existing Units 1 and 2. The thermal component of the discharge is currently limited to an average daily maximum of 96.3^{o}F. The addition of Unit 3 is not anticipated to have a deleterious effect on the St. Johns River.

Coal combustion by-products produced as a result of the addition of Unit 3 will be sold for reuse or disposed in the permitted on-site landfill or an offsite permitted landfill. A monitoring well system is currently in place to monitor groundwater quality adjacent to the landfill area and around the SGS property. The groundwater monitoring system will be modified as necessary to evaluate the impact of SGS Unit 3.

Wetland communities exist within the SGS property boundary. Wetland habitats within the property boundary include mixed wetland hardwood forest, wet pine flatwoods, shrub swamp, mixed hardwood-conifer forest, freshwater marsh, cypress, and ditches; however, many of these areas will remain undisturbed. Uplands are dominated by xeric sandhills consisting of a canopy comprised of oak and longleaf pine, with subdominant communities including areas of slash pine flatwoods and oak hammock forest. Protected animal species known to occur or likely to occur at the site include the gopher tortoise (*Gopherus polyphemus*) as well as regionally common wading birds such as little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), and white ibis (*Eudocimus albus*).

The current stormwater collection and drainage system will be expanded as necessary to collect and treat stormwater runoff onsite generated as a result of the construction and operation of the SGS Unit 3 Project.

2.3.1 Project Benefits

SGS Unit 3 will be integrated into the SGS project site and can be served by much of the existing plant infrastructure. Environmental issues associated with the addition of SGS Unit 3 should be minimal based on the following:

- The new unit will be located within an existing power plant site in a rural area;
- No new transmission or substation facilities will be required;
- To the maximum extent possible, onsite wetland communities will remain undisturbed;
- The new unit will utilize advanced supercritical boiler technology;
- The new unit will be designed and constructed with state of the art pollution control technologies; and
- The new unit will be equipped with a zero liquid discharge system to eliminate discharge of process wastewater, except for cooling tower blowdown, to the St. Johns River.

Where feasible, the capabilities of the existing Unit 1 and 2 common plant facilities and infrastructure will be utilized, including: the administration building, the rail system, access roads and entrances, coal unloading and handling systems, lined coal storage area, industrial and domestic wastewater treatment systems, water supply wells, intake and discharge facilities on the St. Johns River and FGD landfill facilities.

3.0 LAND USE AND ENVIRONMENTAL IMPACT ANALYSES

This section identifies the list of land use and environmental issues that will be analyzed in the SEIS.

3.1 Land Use

3.1.1 Overview of Regulatory Requirements

The potential effects from the SGS Unit 3 Project facilities on the surrounding community, including socioeconomic impacts, cultural resources, potential noise and traffic effects, visual impacts associated with a new stack, mechanical-draft cooling tower, and other plant structures will be evaluated.

The SGS Unit 3 Project is projected to be consistent and in compliance with Putnam County's Comprehensive Plan. The project will require a Planned Unit Development site plan revision and will be subject to the substantive aspects of the Putnam County Land Development Code.

3.1.2 Impact Analysis

Potential impacts associated with socioeconomic and land use issues resulting from the SGS Unit 3 Project will be evaluated in order to ensure conformance with adopted land use plans, zoning ordinances, development regulations, and develop recommendations for mitigation measures and monitoring, if necessary. The review will consider the following:

- Characteristics of the site and surrounding area, size and accessibility of the site, and surrounding land uses;
- The nature and extent of the SGS Unit 3 Project, including land-use types and densities; placement of proposed buildings and other improvements; the location, type and method of maintenance of open space; preservation of natural features; proposed parking areas; traffic circulation; proposed ground coverage and types of water and sewage systems; and
- Conformance of the proposed development with the Putnam County Comprehensive Plan and other applicable regulations.

3.1.2.1 Construction Impacts

The potential socioeconomic and land use effects of site preparation and construction will be determined for the site, local and regional areas. Analysis will include an investigation of the primary and secondary effects, resource commitments, alternatives (as required), and mitigation and monitoring measures. Effects of site preparation, and plant and associated facilities construction due to land impact, impact on human populations including population, housing, community facilities and services, impact on landmarks and sensitive areas, economic and fiscal costs and benefits will be evaluated.

The methodologies that will be used to estimate impacts include, but are not limited to such tasks as visual impact studies, level of service analysis for traffic impacts, economic multipliers for cost/benefit impacts and employment projections for housing and community impacts. These analyses will permit assessment of the probable impacts of construction of the SGS Unit 3 Project to the existing power station and the surrounding community.

3.1.2.2 Operation Impacts

Identification and evaluation of impacts that may be anticipated to occur during facility operations will be addressed by comparing the SGS Unit 3 Project's effects (tax revenue, payrolls, work force, etc.) with predicted baseline conditions during the initial year of operation. Most of the socioeconomic and land use impacts will occur and be assessed relative to the construction phase of the project since land commitments and the work force peaks occur at that time. Historic and baseline information will be compiled for forecasting, primarily by considering historical trends.

3.1.3 Cultural Resources

Based on the existing developed nature of the site, it is anticipated that no sensitive cultural resources will be affected by the SGS Unit 3 Project. An archaeological and historical literature search of Florida Site Files will be conducted to determine the types, chronological placement, and location patterning of known and recorded cultural resources within the project area. It is anticipated that the literature search will confirm that the project will not adversely affect resources that are either known and listed as archeological or historic importance as well as those that have been nominated for protection or are candidates for protection.

3.1.3.1 Proposed Mitigation and Monitoring Measures

If cultural resources are identified, the site's significance will be evaluated and mitigation will be proposed if necessary.

3.1.4 Traffic

The effects of the addition of the SGS Unit 3 Project on the population and community facilities and services of the surrounding area are likely to occur during construction when employment and traffic along U.S. Route 17 is expected to increase. The SGS currently experiences traffic as a result of 1) fuel oil deliveries, 2) coal combustion product sales, 3) limestone deliveries, 4) plant workers, and 5) routine equipment and supply delivery vehicles.

The SGS Unit 3 Project will result in an additional 1,500 temporary jobs during peak construction periods and 50 permanent jobs for plant operations. Additionally, a maximum of 30 trucks per day (10 trucks per day average) will require access to the site during peak construction for equipment delivery and 40 trucks per day (20 trucks per day average) for bulk delivery (i.e., concrete). Both construction and operational related traffic impacts will be addressed in the SEIS.

Current traffic conditions within the project study area will be collected from local and state transportation agencies. Additionally, traffic counts at selected intersections will be collected and evaluated to conduct a level of service (LOS) analysis for the site, nearby roadway network, and affected intersections. The analysis will identify and quantify current and baseline operating conditions and will be used to determine traffic flow patterns and implications of the SGS Unit 3 Project during construction and the first year of operation.

3.1.4.1 Proposed Mitigation and Monitoring Measures

The results of the analyses will be used to determine if measures to mitigate adverse transportation impacts will be required. Mitigation measures could include; 1) staging of work hours, 2) realignment of key intersections; 3) traffic signalization/control; and/or 4) expansion of ingress and egress lanes.

3.1.5 Noise

The SGS Unit 3 Project will be located adjacent to the existing generating units (Units 1 and 2). The SEIS will analyze the intensity and characteristics of sound that may be generated as a result of construction and operation of the SGS Unit 3 Project. Existing sound conditions will be determined via field monitoring at up to six locations within the property boundary and nearby sensitive receptors during both daytime and nighttime periods. Near-field sound level measurements will be performed to characterize current facility noise sources for baseline and current sound level data. Potential noise impacts will be determined and evaluated by adding these proposed sources to existing baseline sound levels and comparing them to local noise regulations.

3.1.5.1 Proposed Mitigation and Monitoring Measures

Results of the noise impact analyses will be used to determine if measures to mitigate noise impacts during construction and operation of the SGS Unit 3 Project will be required. Mitigation could include the following: 1) Staging of construction activities; 2) Site/equipment layout and configuration; 3) Use of sound attenuation materials and equipment; and 4) Minimization or scheduling of alarm noise or noise events (steam blows).

3.1.6 Visual

With the exception of cooling towers, the SGS Unit 3 facilities will be consistent in size and type with the existing Unit 1 and 2 structures at the SGS site. A visual impact assessment will be conducted to determine the potential visibility of the proposed facility structures (i.e., cooling towers, stack, etc.) from various offsite viewpoints within the study area. The assessment will be based on locating the proposed structures relative to existing structures that are visible from offsite locations.

3.1.6.1 Proposed Mitigation and Monitoring Measures

Possible mitigation measures may include modification of building and structure elevations, landscape and buffer design, outdoor lighting to minimize visual impact during nighttime, stack identification lights and screening and buffering of the project from adjacent land uses.

3.2 Air Resources

3.2.1 Overview of Regulatory Requirements

The impact of the facility on air quality will be considered for both construction and operation. The SGS Unit 3 stack emissions, in combination with the effects of the pollution control upgrades to Units 1 and 2, and fugitive particulate emissions associated with fuel, limestone and ash storage and handling operations will be analyzed to determine their impacts on ambient air quality and the environment.

Various regulatory programs have the potential to affect the development of the SGS Unit 3 Project, including:

- Federal Prevention of Significant Deterioration (PSD) permit regulations for impacts in areas that meet the applicable National Ambient Air Quality Standards (NAAQS), referred to as "attainment areas" (40 CFR 50.21);
- Federal New Source Performance Standards (NSPS) for electric utility steam generating units (40 CFR Part 60, Subpart Da) and for coal handling systems (Subpart Y);
- Federal Acid Rain program requirements for SO_2 and NO_X (Title IV of the Clean Air Act);
- Florida State air pollution control regulations requiring a permit to construct and an operating permit under the Title V program; and
- The effects of the EPA's recently promulgated Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR).

The federal Clean Air Act (CAA) requires that National Ambient Air Quality Standards (NAAQS) be set for "criteria" pollutants, defined as air contaminants that have been demonstrated to have the potential for widespread adverse impacts on human health. In response, the EPA has identified six criteria pollutants and established corresponding NAAQS. These pollutants are sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter sized 10 microns in diameter and less (PM_{10}), carbon monoxide (CO), ozone (O_3) and lead (Pb). In addition, the EPA promulgated a new NAAQS for particulate matter sized 2.5 microns and less ($PM_{2.5}$) on July 17, 1997. Compliance with the $PM_{2.5}$ standard at the federal level is not yet required (the EPA policy is to use compliance with PM_{10} as a surrogate). The NAAQS are designed to protect the public health and welfare with an adequate margin of safety. The project area has been classified by the EPA as an attainment area for all of the

criteria pollutants. The FDEP has also established Ambient Air Quality Standards for the criteria pollutants.

SGS is classified as an existing major facility. A modification to an existing major facility that results in a significant net emissions increase equal to or exceeding the significant emissions rates (SER) listed in Section 62-212.400, Table 212.400-2, F.A.C., is classified as a major modification and will be subject to the PSD New Source Review (NSR) preconstruction permitting program for those pollutants that exceed the PSD SERs.

The procedures for determining applicability of the PSD NSR permitting program to the SGS Unit 3 Project, in conjuction with the pollution control the upgrades to Units 1 and 2, are specified in Rule 62-212.400(2)(d)4., F.A.C. The term "significant net emissions increase" is defined by Rule 62-212.400(2)(e), F.A.C. For each regulated pollutant, the net emissions increase for a modification project is equal to the sum of the increases in emissions associated with the proposed project plus all facility-wide creditable, contemporaneous emissions increases minus all facility-wide creditable, contemporaneous emissions decreases. If this net change in emissions is equal to or greater than the applicable thresholds, then the net emissions increase is considered to be significant and the modification will be subject to PSD NSR for that particular regulated pollutant.

On May 12, 2005, EPA promulgated a rule to reduce emissions of SO_2 and NO_X from electric generating units located in 29 eastern states, including Florida. The stated objective of the Clean Air Interstate Rule (CAIR), is to assist eastern states in achieving attainment with the new, more stringent fine particulate matter standard ($PM_{2.5}$) and the 8-hour ozone National Air Quality Standards (NAAQS) by reducing precursor emissions in upwind areas. The rule caps annual SO_2 and NO_X emissions within the affected 29-state region and assigns SO_2 and NO_X budgets (i.e., emission allocations) for each state based on the region caps. Most states are expected to implement CAIR using a cap and trade program (i.e., states will assign emission allowances to each source to meet its budget). The proposed regional and state budgets were established based on emissions from 1999 through 2002 (the baseline). CAIR provides states some flexibility regarding the allocation of allowances, including the determination of which years represent "baseline" with respect to individual units. The 29-state region SO_2 and NO_X caps would be implemented in two phases, with the first phase occurring in 2009 for NO_X and 2010 for SO_2 and the second in 2015 for both pollutants. The 2010 Phase I SO_2 region cap of 3.6 million tons per year corresponds to a 50 percent reduction in current Acid Rain Program SO_2 allowances. The 2015 Phase II SO_2 region cap of 2.6 million tons

corresponds to a 65 percent reduction in current Acid Rain Program SO_2 allowances. For NO_X, the CAIR Phase I and II caps of 1.5 million and 1.3 million tons correspond to NO_X emission rates of 0.15 and 0.125 lb/MMBtu, respectively.

In addition to CAIR, EPA also promulgated a rule to limit mercury emissions from coal-fired boilers on May 18, 2005. This Clean Air Mercury Rule (CAMR) will set an initial nation-wide cap on mercury emissions from coal-fired boilers of 38 TPY beginning in 2010, with an additional decrease to 15 TPY by 2018. EPA's rule also establishes emission limits for new bituminous-fired boilers of 21×10^{-6} pounds per megawatt hour (lb/MWh).

3.2.2 Impact Analysis

Construction and operation of the SGS Unit 3 Project will result in emissions of various compounds into the air. An analysis will be conducted to quantify the expected emissions and determine regulatory applicability. Project increases in emissions that exceed the PSD SER thresholds will be subject to a best available control technology (BACT) determination and to an air modeling analysis, (whereby the predicted concentrations are compared to established health and welfare-based ambient standards and guidelines). The air quality impact analysis is detailed further in Section 3.2.3.

3.2.2.1 Construction

Construction of the SGS Unit 3 Project is expected to result in the emissions of fugitive dust caused by construction activities. In addition, the construction activities will generate small quantities of engine exhaust emissions. The main sources of fugitive dust during the construction of the project will include the following:

- Earthwork, including excavation, bulldozing, landscaping, grading, and other activities performed by heavy equipment;
- Vehicles traveling on unpaved (and to a lesser extent on paved) surfaces (re-entrained road dust); and
- Wind erosion of exposed soils.

Emissions will be considered and quantified where practicable based on readily available emission factors (such as EPA's Compilation of Air Pollutant Emissions Factors, AP-42) and expected

construction activities. Methods to minimize construction-related emissions will be evaluated, including:

- Covering or containerizing loads on all vehicles transporting loose aggregate and material to/from the site to minimize spillage and fugitive dust;
- Applying gravel cover to regularly traveled, unpaved areas on site; regularly maintain through re-grading and re-application as needed until roadways are paved or removed; and
- Applying water to on-site roads as needed during the construction phase through use of a water truck. During dry and windy weather conditions, the application of water will occur more frequently;
- Providing daily monitoring of the site access road entrance for spillage or carryout of loose dirt, mud, etc. Clean up materials deposited on public roadways from construction-related activities as soon as practical; and
- Controlling fugitive dust generation from stockpiled soil due to wind erosion, etc. through measures such as covering the piles with a tarp or regular watering.

3.2.2.2 Operation

The existing Units 1 and 2 each have a maximum heat input of 7,172 million British Thermal units per hour (MMBTu/hr), for a maximum load rating or 715 MW. Units 1 and 2 are nominally rated at 650 MW (net). They burn a blend of pulverized coal and petroleum coke, and No. 2 fuel oil is used for startups and flame stabilization.

The SGS Unit 3 Project would be located adjacent to the existing units and would be similar in basic concept to Units 1 and 2. The design basis for Unit 3, currently under development by Burns & McDonnell, is for a 70/30 blend of coal/petcoke, resulting in a blended fuel sulfur content of approximately 4.5 percent. A further assumption regarding fuel is that all three units would use the same fuel blend. Unit 3 would be able to use some of the existing fuel unloading, storage, and handling systems and equipment.

Emission rates and flue gas characteristics (flow rate, temperature) for the proposed supercritical boiler will be estimated for a range of potential operating conditions based on a combination of the performance of the proposed air pollution control systems, characteristics of the fuels, performance specifications for the boiler, and other relevant engineering data. Data will be developed for two fuel-firing scenarios: 100 percent coal firing and a maximum mixture of coal and petroleum coke (70

percent and 30 percent blend, respectively). Estimates of particulate matter emission rates associated with the controlled material handling and storage operations (i.e., filling of coal and petroleum coke bunkers, material conveyor transfer points) will be made based on design particulate matter control device outlet grain loadings, flow rates and frequencies of operations. Estimates of particulate matter emissions rates for uncontrolled material handling and storage operations (i.e.,coal, petroleum coke and limestone storage) will be made based on published emission factors (EPA AP-42 and others), where available, engineering judgment, and projected frequency of operation.

An analysis will also be provided to show the accompanying emission reductions associated with the proposed upgrades to Units 1 and 2. The effect of emissions netting (i.e., increases associated with Unit 3 and decreases associated with Units 1 and 2) will be compared to the PSD SER thresholds to determine PSD applicability for each pollutant.

Air emissions controls for Unit 3 would consist of an electrostatic precipitator (ESP) for particulate control; wet FGD for sulfur dioxide (SO_2) reduction, selective catalytic reduction (SCR) for nitrogen oxides (NO_X) reduction, and a wet ESP for reduction of sulfuric acid mist. This combination of control systems also results in significant reductions of mercury emissions.

3.2.2.3 Baseline Data

Baseline emission rates for the Seminole Generating Station (SGS) will be obtained from the annual operating reports (AORs) provided to the FDEP. Emission rates for pollutants not covered by the AORs will be estimated based on stack test data, fuel firing records, and readily available emission factors (i.e., EPA's AP-42 emission factor database).

A description of climatology and meteorology of the area surrounding the SGS will be provided based on meteorological data measured at the Jacksonville Airport and other readily available data sources (i.e., Climate of the States).

3.2.3 Air Quality Impact Analysis

Computer models approved by EPA and FDEP, including the Industrial Source Complex Short-Term (ISCST3) dispersion model, will be used to assess air quality impacts associated with emissions from the SGS Unit 3 Project. The computer models will be set up to be representative of the area and will

be described in detail in a dispersion modeling protocol that will be submitted to FDEP and EPA for review and approval as part of the air permitting process.

The Source Impact Analysis will be performed to demonstrate compliance with the federal and state AAQS and PSD Class I and II increments. The impact analysis will be performed in conformance with EPA modeling and new source review guidelines, which are followed by FDEP. The modeling analysis will require emission inventory data, meteorological data, receptor data, background air quality data, and other basic model input data.

Near-Field Impacts- The air modeling analysis will be based on predicting concentrations using the Industrial Source Complex Short-Term (ISCST3) model for determining compliance with AAQS and PSD Class II increments. It should be noted that by the time air modeling is performed, ISCST3 may be replaced by AERMOD. EPA has issued numerous public notices indicating the preference for using AERMOD and the imminent replacement of ISCST3. AERMOD will be used in the event it is required by EPA's final promulgation.

For the near-field impacts, concentrations will be predicted using the surface and upper air data from Jacksonville International Airport and Waycross, Georgia, for 1984 to 1988. These meteorological data have been used in previous air modeling studies performed in those areas and are recommended for use by the FDEP. In addition, cumulative air quality impacts have previously been performed for SO_2 and PM_{10} at the PSD Class I Areas of the Okefenokee and Chassahowitzka National Wilderness Areas using the latest SO_2 and PM_{10} emission inventories approved by the FDEP. This data will be used in the current study as appropriate.

The maximum annual and short-term average pollutant concentrations predicted for the project by the ISCST3 model will be compared to the PSD Class II significant impact levels (SILs). If a modeled concentration exceeds the SIL, it will be necessary to model the emissions of other major background sources to determine whether the SGS Unit 3 Project, in conjunction with the contribution of other major sources and regional background concentrations, will exceed the applicable NAAQS. EPA and FDEP modeling guidelines require consideration of sources that are located within a radius equal to the farthest distance to the SGS Unit 3 Project's impact above the SIL plus an additional 50 km. Model input data for these background sources will initially be obtained from FDEP. Screening modeling, using ISCST3, will then be conducted to limit the number of background sources to only those that will contribute significantly to the total modeled concentrations. Once the list of

background sources has been finalized and verified, the final inventory will be provided to the FDEP for approval.

Far-Field Impacts- The Seminole facility is located within 105 km of the Okefenokee National Wilderness Area (NWA) and within 145 km of the Chassahowitzka NWA. The applicable standards and criteria that are required include the PSD Class I Increments, visibility in the form of regional haze, and sulfur and nitrogen deposition. Visibility and deposition are the Air Quality Related Values (AQRVs) associated with these NWAs. If impacts above the FLM guidelines with respect to sulfur deposition and regional haze AQRVs are projected to occur, a more refined cumulative impact analysis would be required. For the far-field impacts at the PSD Class I Areas, concentrations will be predicted using the CALPUFF model for the years 1990, 1992, and 1996.

*Other Impacts -*The use of Selective Catalytic Reduction (SCR) to control NO_X emissions from the supercritical PC boiler will require the storage and use of anhydrous ammonia at the site. The tanks containing anhydrous ammonia will be registered in accordance with FDEP regulations. A worst-case air quality impact analysis will be conducted, using EPA's Risk Management Program guidelines, to estimate airborne ammonia concentrations at the fence-line and the nearest actual or potential residence to evaluate this hypothetical scenario.

In addition, a discussion of the potential impact of carbon dioxide (CO_2) emissions from the supercritical PC boiler on global warming in relation to regional and global CO_2 emissions will be provided.

3.2.3.1 Proposed Mitigation and Monitoring Measures

The existing SGS is classified as a major stationary source as defined by the federal PSD regulations. Based on the projected reductions associated with pollution control upgrades to Units 1 and 2, as well as the projected performance of the supercritical PC boiler, it is expected that the SGS Unit 3 Project will operate such that there will be no or minimal increases in the facility's annual emissions of NO_X and SO_2 relative to current levels [determined from the average emission rates during the two-year baseline period (i.e., 2003 and 2004)]. Based on this, it is expected that the project will be subject to the federal PSD permitting requirements for only CO, volatile organic compounds (VOCs), PM/PM_{10} and sulfuric acid mist. As required by the PSD program, SECI will conduct a Best Available Control

Technology (BACT) evaluation to determine the best level of control for those pollutants, taking into account their environmental, economic and energy consumption impacts.

SECI also will evaluate alternative pollution control techniques for the supercritical PC boiler. Potential alternatives will be evaluated with respect to technical feasibility, economic, energy and environmental impacts.

3.3 Ecological Resources

3.3.1 Overview of Regulatory Requirement

The proposed location for the SGS Unit 3 Project is adjacent to existing Units 1 and 2, within areas partially cleared of native vegetative communities. Impacts to threatened or endangered species which may occur as a result of the SGS Unit 3 Project will be regulated by the USFWS and/or the FFWCC. Jurisdictional wetlands at the SGS Unit 3 Project site are regulated by the USACE and FDEP. Regulatory agencies will be consulted for comment with regards to potential impacts to listed species and wetlands and avoidance measures as the project develops.

The Clean Water Act (CWA) (and corresponding state program) regulates wastewater discharge to the St. Johns River to ensure that the discharge does not violate water quality standards or interfere with the beneficial uses of the St. Johns River. Section 316(b) of the Clean Water Act regulates the location, design, construction, and capacity of cooling water intakes for the purpose of protecting marine life from entrainment and impingement as a result of intake withdrawals from surface waters.

3.3.2 Impact Analysis

Baseline data on the terrestrial and aquatic ecology at the SGS Unit 3 Project and vicinity will be obtained from the 1978 Site Certification Application, the original Environmental Impact Statement and consultation with regulatory agencies, including the Florida Fish and Wildlife Conservation Commission (FFWCC), U.S. Fish and Wildlife Service (USFWS) and the St. Johns River Water Management District (SJRWMD). Information on threatened, endangered, and/or species of special concern will be obtained from the Florida Natural Areas Inventory (FNAI) database of known occurrences of listed species in addition to direct observations from field reconnaissance. The baseline ecological conditions will be updated by professional biologists using information from the FDEP jurisdictional wetland delineation, the SJRWMD and other agencies.

3.3.2.1 Construction

An evaluation of the potential ecological impacts of construction activities upon terrestrial and aquatic resources will be conducted. Based upon the final site layout, the analysis will describe the nature, extent, and duration of impacts to the on-site terrestrial ecology and aquatic ecology of the St. Johns River. Wetland impacts will require approval via the state PPSA Certification process (and USACE if applicable) and may require compensatory mitigation. Impacts to jurisdictional wetland areas will be quantified and their ecological value assessed through use of the FDEP's UMAM which compares the functional attributes of impacted wetlands to the mitigation wetland. Impacts to vegetative communities will be quantified and their associated impact to important species of flora and fauna will be evaluated. Impacts to aquatic life and/or vegetative communities will be evaluated based on reviews of available fisheries data, fish life history data and physical data specific to the St. John's River.

3.3.2.2 Operation

An analysis of ecological impacts resulting from operation of the facility will be prepared for the SGS Unit 3 Project. Impacts from activities associated with the proposed surface water discharge from plant operations into the St. Johns River will be identified. A comparison of predicted noise levels to ambient conditions will be made to determine if the listed species identified in the baseline studies, if any, are adaptable to the predicted levels. A screening level analysis will be conducted to evaluate the impact of air emissions and deposition on the terrestrial ecology in the vicinity of the facility. This evaluation will be an extension of the soils and vegetation analysis conducted in support of the air permit application.

The thermal component of the discharge is anticipated to be consistent with Units 1 and 2. Near-field buoyant jet computerized mathematical hydrodynamic modeling will be conducted to ensure that deleterious impacts will not occur.

Total intake water withdrawals are anticipated to be approximately 35 MGD, and through screen velocity is anticipated to be less than 0.5 feet per second (fps), for all three units. Since the total intake rate will be less than 50 MGD, the SGS facility will not be subject to EPA's new 316(b) Rule. If the EPA regulation did apply, the use of closed-cycle cooling tower technology would meet the essential substantive requirements. Additionally, prior ecological studies based on the abundance and distribution of fish and macroinvertebrates in the vicinity of the intake structure and operating

characteristics of the SGS cooling water intake structure meet the Section 316(b) criteria for "best technology available for minimizing environmental impact" (Seminole Units 1 and 2 – 316(b) Study Report, 1979, Dames and Moore).

3.3.2.3 Proposed Mitigation and Monitoring Measures

Unavoidable wetland impacts may require compensatory mitigation. The amount of compensatory mitigation, if required, will be calculated based upon a functional assessment of wetlands proposed to be impacted, using the FDEP's Uniform Wetland Mitigation Assessment Methodology (UMAM).

Mechanical draft cooling towers have been proposed to ensure that the thermal component of the discharge will not have a deleterious impact on aquatic vegetation and meet Section 316(a) of the Clean Water Act. The cooling water intake structure meets the Section 316(b) criteria for Best Technology Available (BTA); therefore, additional mitigation and monitoring measures should not be required.

3.4 Water Resources

3.4.1 Overview of Permitting Requirements

Discharges to surface waters are regulated by the Clean Water Act which requires permitting of discharges under NPDES. In Florida, this program has been delegated to FDEP. SECI anticipates applying for a modification to their existing NPDES Permit for the expected increase in flow rate of the discharge of industrial wastewater (i.e., cooling tower blowdown) to the St. Johns River. Although the flow rate is expected to increase with the addition of Unit 3, the quality of the discharge is expected to improve because of the removal of most process wastewaters from the discharge to the St. Johns River as a result of the ZLD system. The discharge to the St. Johns River may require the limited issuance of mixing zones or variances approved by the FDEP and is not projected to adversely impact water quality or indigenous communities of aquatic organisms in the river. Cooling tower blowdown will be the only industrial wastewater that will continue to be discharged into this segment of the St. Johns River.

Under the Rivers and Harbors Act, the U.S. Army Corps of Engineers regulates activities in navigable waters of the U. S. SECI intends to apply for a permit for authorization to construct and operate an additional intake water pipe. Construction will be completed in a manner to minimize turbidity and

impact to navigable waters and comply with river development standards identified in Section 6.03 of the Putnam County Land Development Code.

The additional requirement for high quality boiler make-up water (<0.2 MGD) will require authorization by the St. Johns River Water Management District. The additional water supply will require a detailed hydrogeologic analysis and modeling effort to demonstrate that existing and proposed groundwater withdrawals will not impact permitted users, wetlands and nearby surface waters. A water supply alternatives analysis is currently being completed in order to identify the most feasible alternative for water supply to meet the needs of the SGS Unit 3 Project. Water supply sources currently under evaluation include groundwater, surface water, reuse, stormwater and municipal sources such as reclaimed effluent and potable water.

Coverage under the Generic Permit for Stormwater Discharge from Large and Small Construction Activities will be required for the construction of SGS Unit 3.

3.4.2 Impact Analysis

Construction and operation of the SGS Unit 3 Project will result in surface and groundwater discharges as well as additional stormwater runoff. Analyses will be conducted to quantify the anticipated discharges as compared to current and background conditions to address water quality, the segregation of wastewater disposal and overall stormwater management.

3.4.2.1 Construction

Construction of the SGS Unit 3 Project is anticipated to impact topography or soils which might affect offsite runoff and groundwater. Site preparation and construction activities are not expected to cause any long-term groundwater impacts on or offsite. Temporary dewatering will likely be required throughout certain phases of the construction project.

- Adequate land is available to ensure that all stormwater runoff generated during construction activities will be treated and managed on-site.

- Impacts to groundwater are only expected to occur during construction related excavation/dewatering activities. Dewatering systems will be installed and maintained during excavation, backfill and construction operations. Water will be pumped to onsite drainage systems or temporary retention ponds.

- Stormwater runoff will be controlled and managed within onsite drainage systems or temporary retention ponds.

3.4.2.2 Operations

SECI will review and evaluate available data on flow and water quality of the St. Johns River to determine impacts associated with the proposed surface water discharge. This evaluation will utilize the same near-field buoyant jet computerized mathematical hydrodynamic model that was used during the original permitting of Units 1 and 2, or an equivalent model. The model will be used to quantify the impact of the discharge on water quality and the aquatic community to ensure compliance with the water quality standards.

Analysis of impacts to surface waters will consider water withdrawal impacts from the St. Johns River and the groundwater aquifer, if applicable, as well as discharge of the cooling tower blowdown. A comparison of impacts for the existing and proposed facility configuration will be provided.

The potential for stormwater runoff as a result of the SGS Unit 3 power block and associated facilities will be analyzed relative to pre-existing (current) conditions. The analysis will be performed in accordance with the recommendations contained within the SJRWMD publication "Applicant's Handbook Management and Storage of Surface Waters", including the approved methodology for computation of runoff in Section 10.3.5 of the handbook. The results from the analysis will be used to develop a conceptual stormwater management plan for construction and operation of the SGS Unit 3 Project.

3.4.2.3 Proposed Mitigation and Monitoring Measures

Water for cooling tower makeup will continue to be withdrawn from the St. Johns River. With the addition of Unit 3, average withdrawal may increase to approximately 35 MGD. This anticipated volume represents less than 1.1 percent of the annual average river flow. The intake and discharge structures and pump house will not require modification to support the additional withdrawal. An additional pipe between the intake structure and the pump house, as well as between the pump house and the new SGS Unit 3 will be added to ensure that adequate flow is available for cooling water.

Surface water impacts from construction activities which occur as a result of the construction of the pipe will be monitored and managed in a way as to not degrade surface water quality of the St. Johns

River. Impacts will be mitigated by erosion control features such as hay bales, silt screens and/or turbidity curtains and monitoring of these features during the construction process.

Low intake velocities associated with the withdrawals from the St. Johns River will ameliorate any potential impacts to aquatic biota within the river.

Additional impervious surface area which results from the construction and operation of SGS Unit 3 Project will be controlled by the existing stormwater management system which will be modified to support the proposed facilities.

A stormwater pollution prevention plan (SWPPP) will be developed in accordance with the NPDES General Permit for Construction Activities. The SWPPP will address the areas impacted by the SGS Unit 3 Project and will include measures to minimize potential adverse impacts to surface waters from construction and operation-related stormwater runoff.

3.5 Solid Waste

Coal combustion (i.e., dry fly ash and bottom ash) and wastewater treatment by-products will continue to be produced as a result of the addition of Unit 3. Bottom ash will continue to be sold to concrete and concrete block manufacturers. Fly ash will be sold for reuse or trucked to the permitted on-site landfill for disposal. The addition of the ZLD system will result in a dry solid reject which will be disposed of in the on-site landfill or in an offsite permitted landfill. A monitoring well system is currently in place to monitor groundwater quality adjacent to the landfill area.

3.5.1 Overview of Permitting Requirement

Standards for design, construction, operation and closure of industrial and solid waste management facilities have been adopted by FDEP. Landfill facilities will be constructed with a composite or double liner and a leachate treatment collection and removal system. Facilities for the onsite management of the wastes will not require additional permits, but will require review and approval of the final design by the FDEP.

3.5.2 Impact Analysis

Site layout and planning must incorporate the need for sufficient land area to support the construction of facilities to store and dispose of coal combustion and wastewater treatment by-products with minimal impact to groundwater resources. An analysis will be conducted to evaluate the impact of the construction and operation of the landfill facilities on surface water and groundwater resources.

3.5.2.1 Construction

Design and construction of the landfill facilities will be conducted in accordance with applicable rules and regulations to ensure the installation of a structurally stable and environmentally suitable storage/disposal area.

3.5.2.2 Operation

The degree of impact of the landfill facilities on surface water and groundwater will be evaluated in order to consider the impact of runoff and seepage potential and migration of leachate from the landfill area. Specific consideration will be given to the evaluation of the impacts of the landfill area to on-site and off-site surface water and groundwater quality with controls to collect and treat any surface or groundwater prior to disposal.

3.5.2.3 Proposed Mitigation and Monitoring Measures

Any potential impacts to groundwater will be evaluated and considered during the final design of the landfill area. A groundwater monitoring program is currently in place to monitor the impact of facility operations to onsite and off-site groundwater quality. Amendment of the monitoring plan will be made, if necessary to accommodate the SGS Unit 3 Project.

4.0 ALTERNATIVES ANALYSIS AND IMPACT ASSESSMENT PROCESS

4.1 Project Alternatives

In addressing the future power supply needs of its members, SECI evaluated generation and supply alternatives that could be considered in lieu of the SGS Unit 3 proposal. The need to acquire new electrical power is driven by projected load requirements and purchased power contract expirations and is further defined by planning studies. The plan to add base load capacity in 2012 is the result of a two-fold process 1) to meet reliability needs and 2) provide SECI Members with a stable and competitive price for wholesale power.

SECI's current power supply portfolio includes base load, intermediate load and peaking resources. A suitable resource mix by capacity type is important for cost effectiveness, just as adequate capacity is important for reliability purposes. The most appropriate combination of resource types is a function of economics, fuel prices, and load forecast. Optimization studies were conducted using a combination of spreadsheet analyses, graphical techniques, and production costing studies based on the most recent planning assumptions and market economics. The analyses indicated that the need beginning in the 2012 time period would be best served by a 750 MW coal fired base load unit because of the economic advantages over other types of fuel. To meet its base capacity need, SECI compared pulverized coal to gas fired combined cycle and considered integrated gasification combined cycle (IGCC) and fluidized bed technologies. A summary of the technology evaluation follows:

- Self-build Combined Cycle – Evaluated and eliminated on both an economic basis and as a result of the detailed risk analysis;
- Integrated Gasification Combined Cycle – Evaluated and eliminated from consideration due to the immaturity of the technology; and
- Fluidized Bed – Evaluated and eliminated since this technology is not considered economical for the amount (750 MW) of capacity needed.

To meet the 2012 baseload capacity need, an "all-source" Request for Proposals (RFP) for purchased power alternatives was issued on April 19, 2004. The RFP was structured to allow bidders the flexibility in the type of capacity proposed and the contract term. SECI received ten (10) proposals from five (5) different entities, including independent power producers and investor-owned utilities.

Base load and intermediate capacity was offered in amounts ranging from 104 MW to over 650 MW for terms of twenty to forty years and included capacity from proposed base load and combined cycle units. The following table summarizes the responses:

SUMMARY OF OFFERS RECEIVED					
Bidder	Type	No. of Offers	Capacity Type (Location)	MW	Term (Years)
Invenergy	IPP	2	New pulverized coal/new CC unit (Florida)	550-650	20 or 30
LS Power	IPP	1	New pulverized coal (Georgia)	400-600	20 or 30
Pasco Cogen	IPP	2	Existing LM 6000 CC (Florida)	104-110	20
Peabody	IPP	1	New pulverized coal (Kentucky)	100-750	10-40
Southern	IOU	4	New CC (Florida)	533-655	20

SECI concurrently performed a feasibility study to add a third 600 MW class coal unit at the existing SGS (the self-build option). SECI also participated in a feasibility study for a 600 MW jointly owned coal fired unit with several Florida municipalities at a 20 percent participation level (Solid-Fuel Power Plant Project, Site Selection and Feasibility Assessment, 2003). The joint unit participation was determined not to be the best economic alternative for SECI and the self-build option was updated for a 750 MW unit at the SGS.

Using a detailed bid-evaluation process, SECI's competitive bidding process seeking base load capacity, in conjunction with related economic studies have demonstrated that a self-build 750 MW coal-fired unit is the best alternative to meet a portion of SECI's capacity needs in 2012 and beyond (SECI RUS Loan Guarantee Application Package, September 2005).

4.2 Site Alternatives

SECI participated in a site-selection and feasibility study with several municipalities which focused on the siting of a supercritical coal-fired power plant in the state of Florida. The feasibility study identified five greenfield site areas and one existing power plant as potential site locations. The areas were evaluated with regard to air emission/impacts, water supply, wastewater discharge, proximity to transmission and rail lines, and land use/ownership. Based on the feasibility study, the best alternative for SECI was the self-build option at the existing SGS power plant site (Solid-Fuel Power Plant Project, Site Selection and Feasibility Assessment, 2003).

5.0 SUBMITTAL OF COMMENTS

Persons wanting to submit comments or concerns about the SGS Unit 3 project and its related permits may submit those comments in writing to Ms. Stephanie Strength by mail or through email to the address listed below. All comments must be postmarked by November 19, 2005.

Rural Utilities Service
U.S. Department of Agriculture
1400 Independence Avenue, SW
Mail Stop 1571
Washington, DC 20250
Stephanie Strength, Environmental Protection Specialist
USDA/Rural Development/Utilities Program
Telephone (202) 720-0468
Email: Stephanie.Strength@wdc.usda.gov

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TABLES

TABLE 1

SEMINOLE GENERATING STATION UNIT 3
PRELIMINARY LIST OF PERMITS AND APPROVALS

PERMIT/APPROVAL	***AGENCY***
FEDERAL	
Record of Decision – SEIS 7 CFR Part 1794	RUS
Nationwide Permit 33 CFR Part 330	ACOE
STATE	
PPSA Certification – Conditions of Certification 62-17, Florida Administrative Code (FAC)	FDEP
PSD Permit for Construction 40 CFR Part 50.21 and 62-212, FAC	FDEP/EPA Region IV[1]
NPDES Permit for Discharge to Waters of the U.S. 40 CFR Part 121, 122 and 62- 620, FAC	FDEP/EPA Region IV[2]
NPDES – Stormwater General Permit for Construction Activities (Notice of Intent) 40 CFR Part 121, 122 and 62-621, FAC	FDEP/EPA Region IV[2]
LOCAL	
Putnam County Development Review Section 12.04 and Section 12.05, Putnam County Land Development Regulations	Putnam County

1. FDEP program approved by EPA.
2. NPDES program delegated to FDEP by EPA.

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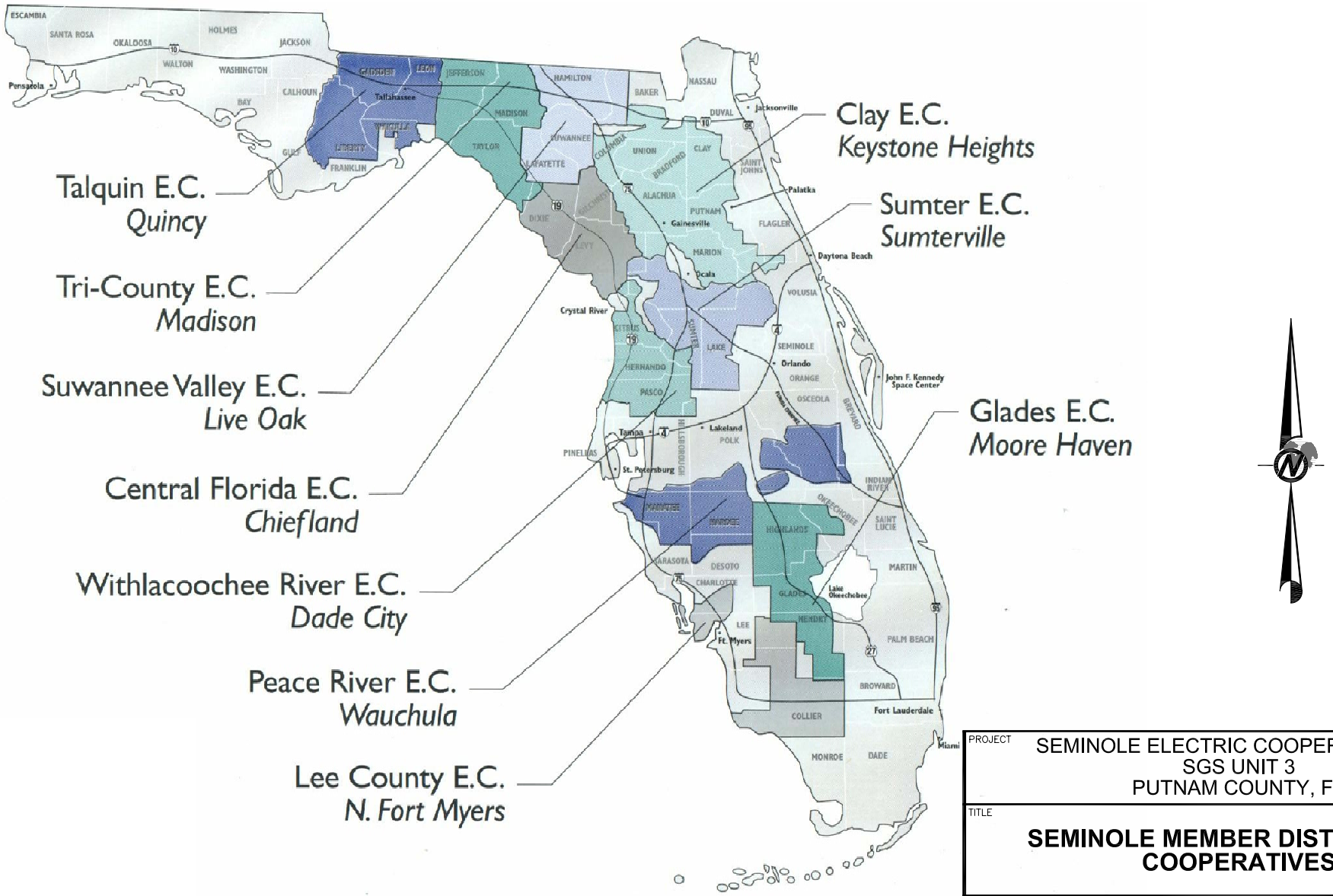
FIGURES



PROJECT

SEMINOLE ELECTRIC COOPERATIVE INC
SGS UNIT 3
PUTNAM COUNTY, FL

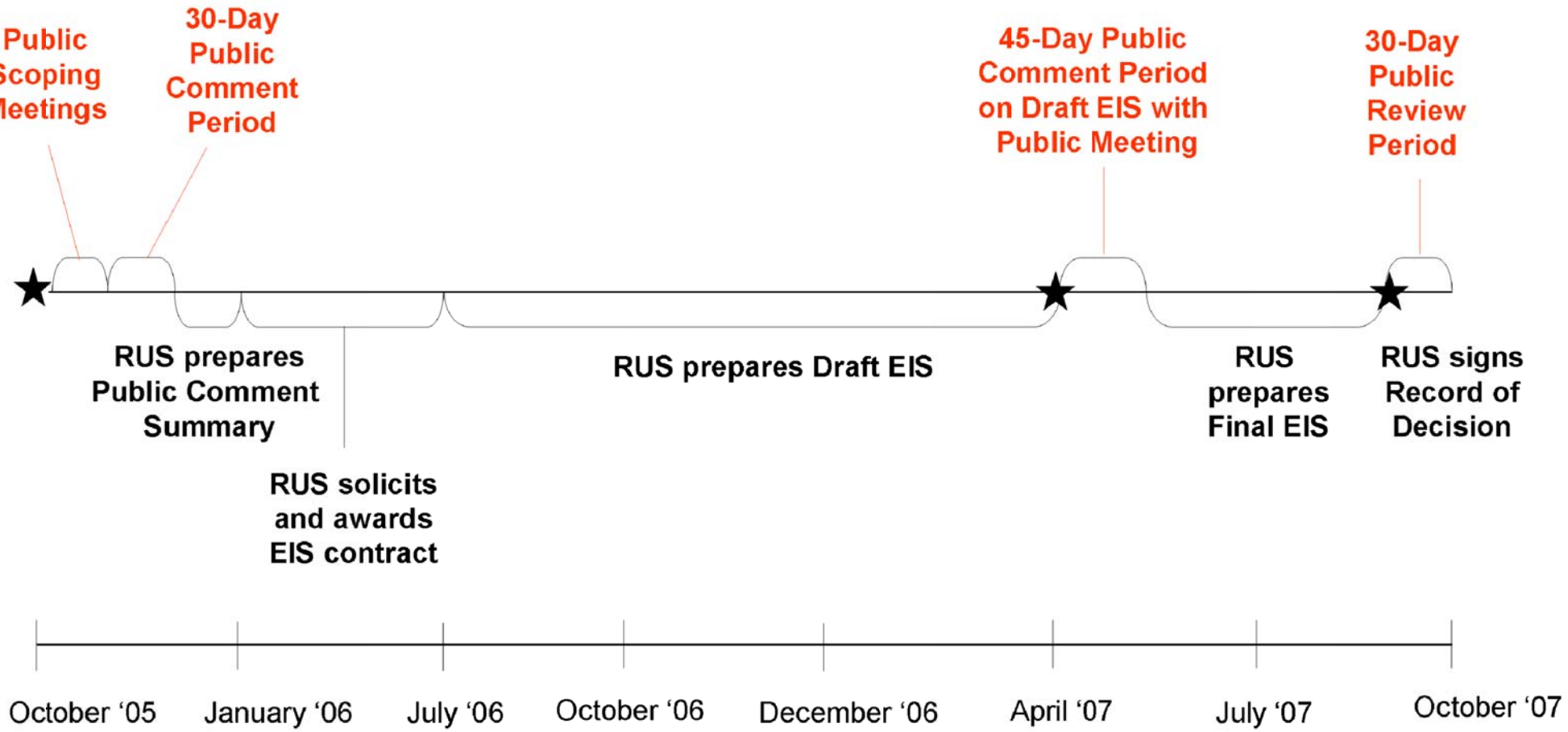
TITLE

SEMINOLE MEMBER DISTRIBUTION COOPERATIVES

Golder Associates
Tampa, Florida

PROJECT No.		053-9540	FILE No.		0539540A002
DESIGN	MEF	09/01/05	SCALE	AS SHOWN	REV. 1
CADD	MEF	09/01/05			
CHECK	MM	09/02/05			
REVIEW	MM	10/4/05			

FIGURE 1



★- Public Notices (Newspaper, Federal Register)

PROJECT
SEMINOLE ELECTRIC COOPERATIVE INC
SGS UNIT 3
PUTNAM COUNTY, FLORIDA

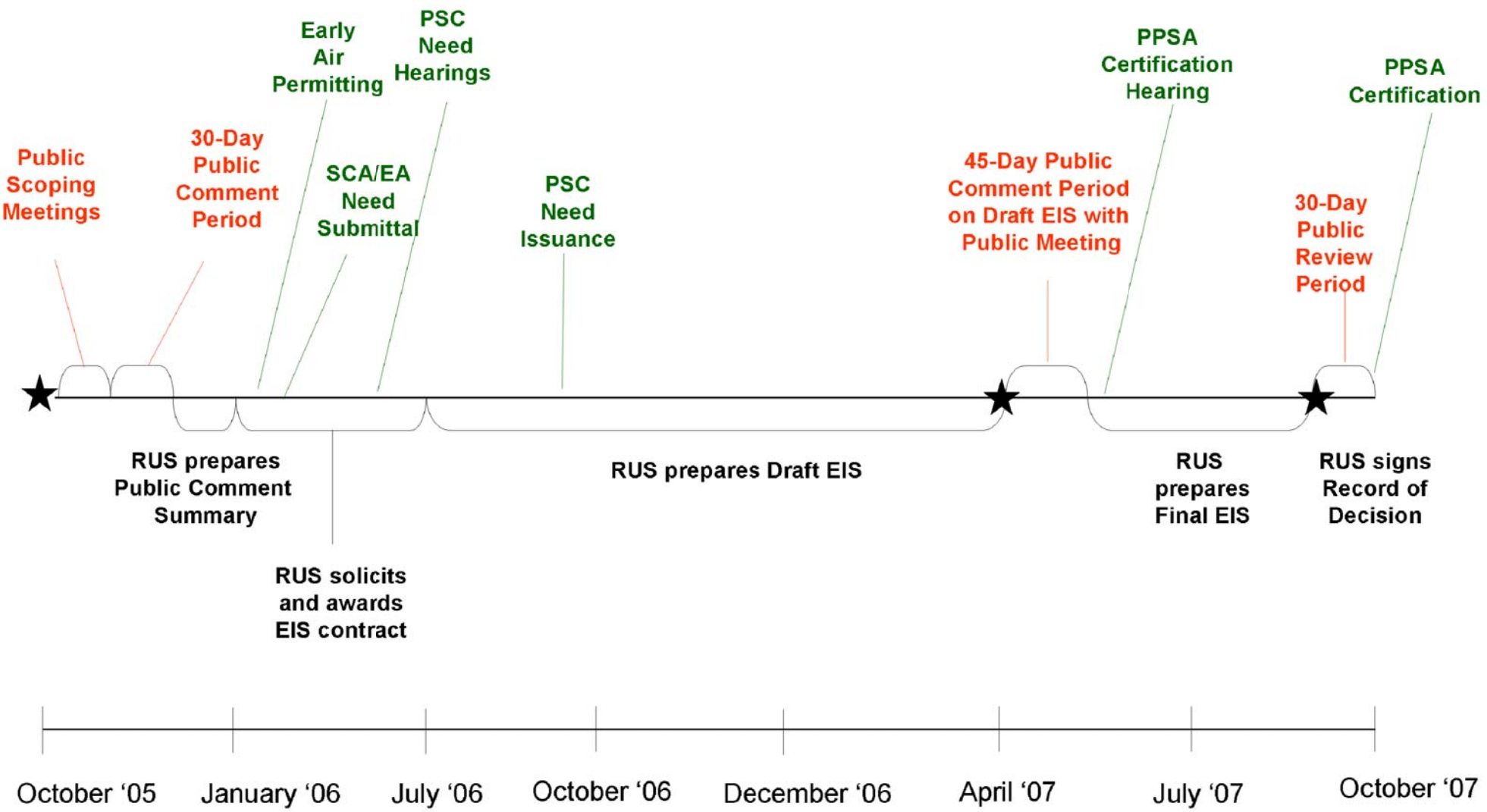
TITLE
ESTIMATED TIMELINE OF RUS SUPPLEMENTAL ENVIROMENTAL IMPACT STATEMENT (SEIS) AND PUBLIC INVOLVEMENT PROCESS

Golder Associates
Tampa, Florida

PROJECT No.		053–9540	FILE No.		0539540A005
DESIGN	MEF	09/02/05	SCALE	AS SHOWN	REV. 1
CADD	MEF	09/02/05			
CHECK	MM	09/02/05			
REVIEW	MM	10/04/05			

FIGURE 2

Drawing file: 0539540A006.dwg Oct 04, 2005 – 4:52pm



★- Public Notices (Newspaper, Federal Register)

Note: Need to include Putnam County Hearings/Approvals

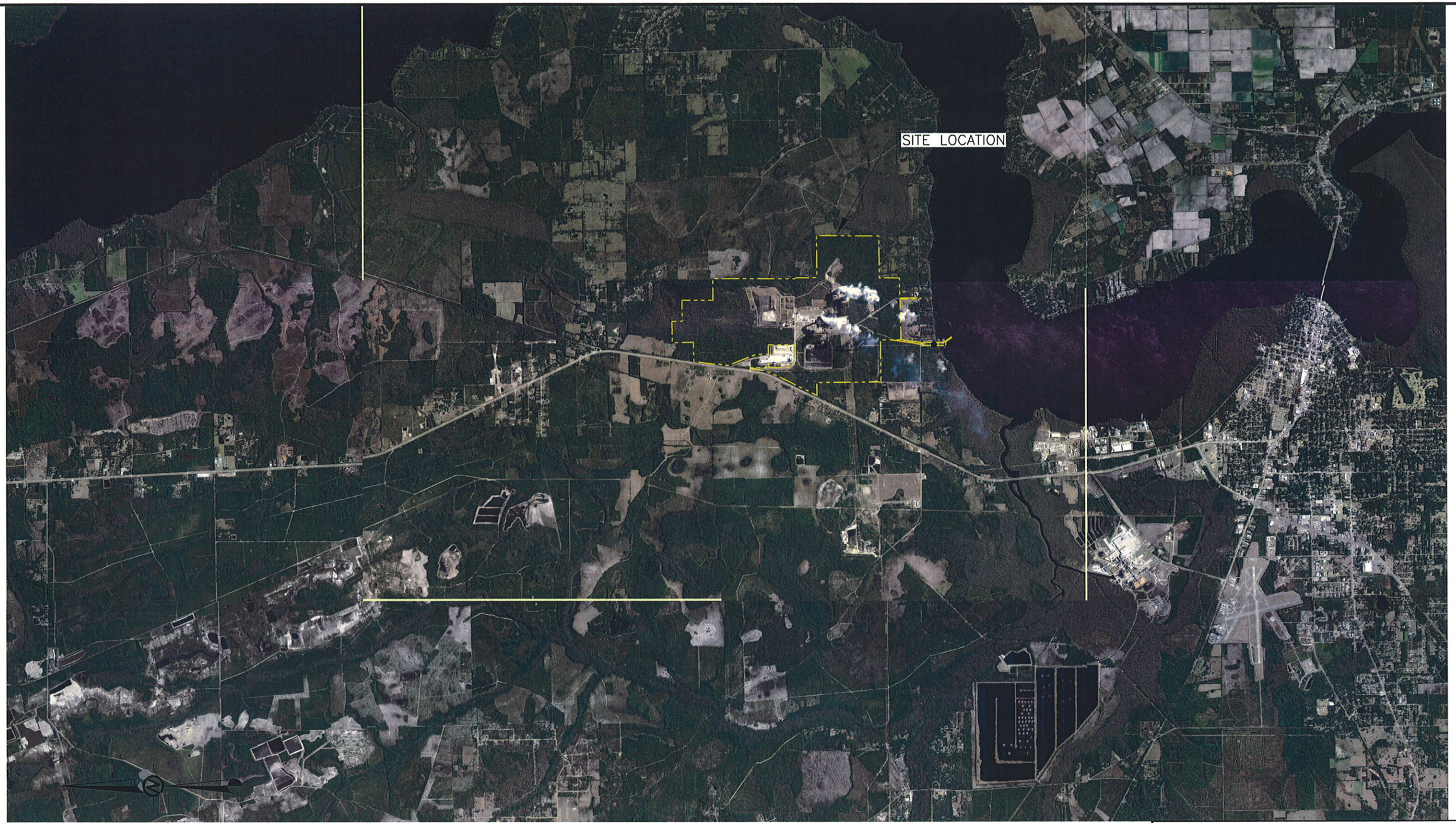
PROJECT
SEMINOLE ELECTRIC COOPERATIVE INC
SGS UNIT 3
PUTNAM COUNTY, FLORIDA

TITLE
ESTIMATED TIMELINE OF SUPPLEMENTAL ENVIROMENTAL IMPACT STATEMENT AND FLORIDA POWER PLANT SITING CERTIFICATION

Golder Associates
Tampa, Florida

PROJECT No.		053-9540	FILE No.	0539540A006
DESIGN	MEF	09/02/05	SCALE AS SHOWN	REV. 1
CADD	MEF	09/02/05		
CHECK	MM	09/02/05		
REVIEW	MM	10/04/05		

FIGURE 3



REFERENCES

1.) DIGITAL ORTHOPHOTOS FLOWN 2004 FOR USGS 7.5 MIN DRG PALATKA, BOSTWICK, RIVERDALE, AND HASTINGS

0 1,5003,000 6,000
SCALE: 1" = 6,000'

PROJECT
SEMINOLE ELECTRIC COOPERATIVE INC.
SGS UNIT 3
PUTNAM COUNTY, FL

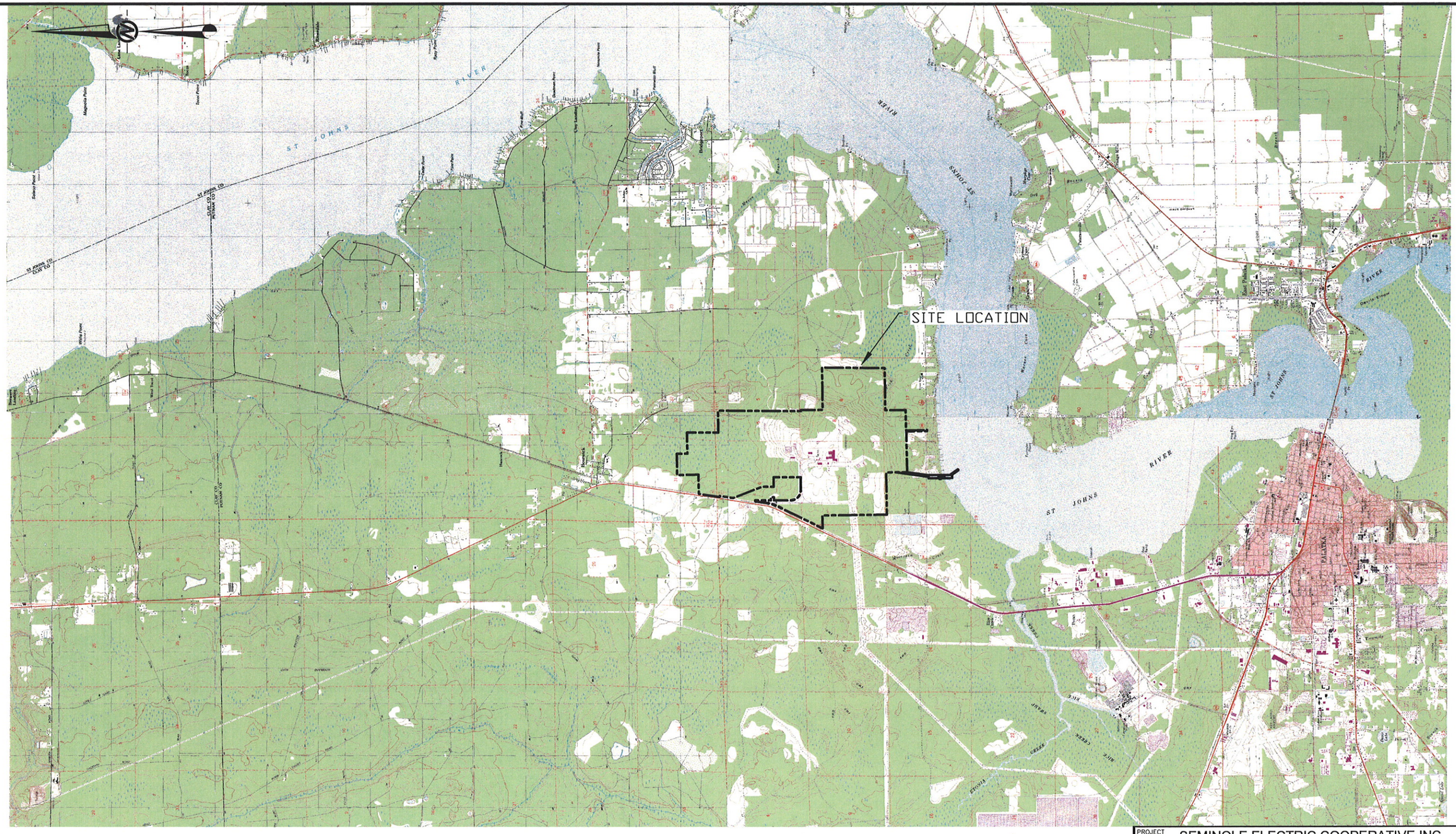
TITLE
SITE LOCATION-AERIAL

Golder Associates
Tampa, Florida

PROJECT No.		053-9540	FILE No.	0539540A003.dwg	
DESIGN	MEF	09/01/05	SCALE	AS SHOWN	REV. 2
CADD	MEF	09/01/05			
CHECK	MM	09/02/05			
REVIEW	MM	10/4/05			

FIGURE 4

Drawing file: F:\PROJECTS\2005 PROJ\053-9540\0539540A003.dwg Oct 04, 2005 - 11:24am



REFERENCES

1.) USGS 7.5 MIN DRG (FLORIDA)
PALATKA, BOSTWICK, RIVERDALE, HASTINGS

0 1,5003,000 6,000
SCALE: 1" = 6,000'

PROJECT
SEMINOLE ELECTRIC COOPERATIVE INC.
SGS UNIT 3
PUTNAM COUNTY, FL

TITLE
SITE LOCATION-TOPOGRAPHIC MAP

Golder Associates
Tampa, Florida

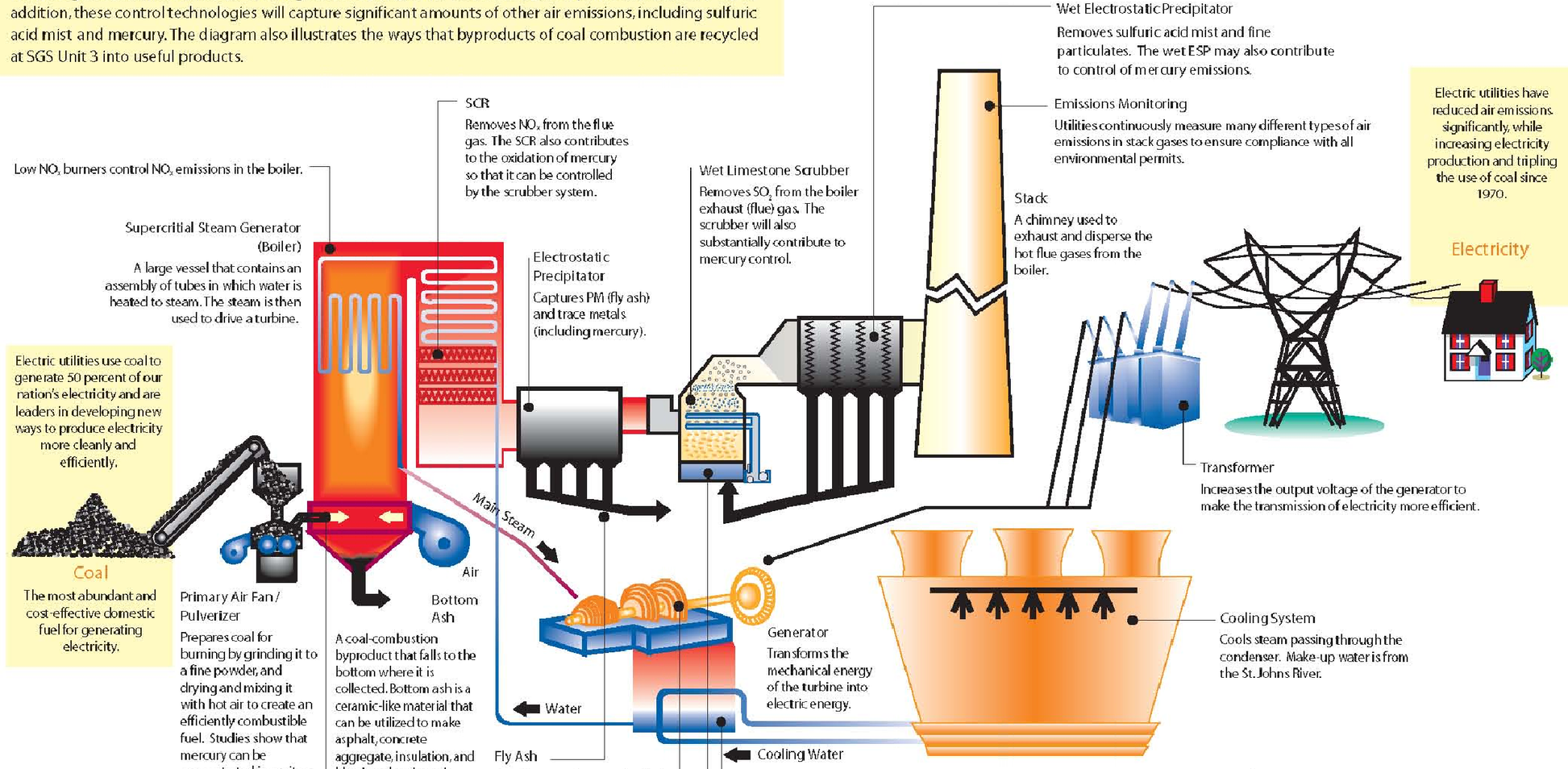
PROJECT No.		053-9540	FILE No.	0539540A004
DESIGN	MEF	09/01/05	SCALE AS SHOWN	REV. 2
CADD	MEF	09/01/05		
CHECK	MM	09/02/05		
REVIEW	MM	10/4/05		

FIGURE 5

Drawing file: F:\PROJECTS\2005 PROJ\053-9540\0539540A004.dwg Oct 04, 2005 - 11:31am

How Seminole Generating Station Unit 3 Reduces Air Emissions

This simplified diagram illustrates how the various emissions control systems will work, and work together, to make Seminole Generating Station's Unit 3 (SGS Unit 3) a clean coal plant for electric generation. It explains the advanced technologies that will reduce unit emissions to air, land, and water, including state-of-the-art technologies to control emissions of nitrogen oxide (NO_x), sulfur dioxide (SO_2), and particulate matter (PM). In addition, these control technologies will capture significant amounts of other air emissions, including sulfuric acid mist and mercury. The diagram also illustrates the ways that byproducts of coal combustion are recycled at SGS Unit 3 into useful products.



MODIFIED FROM SOURCE: EDISON ELECTRIC INSTITUTE
PRODUCED SEPTEMBER, 2005

PROJECT
SEMINOLE ELECTRIC COOPERATIVE INC.
SGS UNIT 3
PUTNAM COUNTY, FL

TITLE
HOW SGS UNIT 3 REDUCES AIR EMISSIONS

Golder Associates
Tampa, Florida

PROJECT No.		053-9540	FILE No.	0539540A007.dwg	
DESIGN	MEF	09/01/05	SCALE	AS SHOWN	REV. 1
CADD	MEF	09/01/05			
CHECK	MM	09/02/05			
REVIEW	MM	10/04/05			

FIGURE 6

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